

Application No. 10/089,810
Case No. FA 1068

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9. (canceled)

Claim 10. (previously presented) A process for coating a clear lacquer coating over a base lacquer in a base lacquer/clear lacquer two-coat lacquering system, comprising the steps of:

- a) applying a base lacquer coating selected from the group consisting of a color-providing base lacquer coating and an effect-providing base lacquer coating to a substrate;
- b) applying the clear lacquer coating onto the base lacquer coating as a top coating, said clear lacquer coating being curable by radical polymerization; and
- c) curing said clear lacquer coating with high-energy radiation;

wherein the clear lacquer coating comprises a resin solid consisting of:

- I. 70 to 100 wt.% of at least one radically polymerizable polymer selected from the group consisting of oligomers and prepolymers, wherein said polymers have at least one olefinically unsaturated group; and
- II. 0 to 30 wt.% of at least one radically polymerizable reactive thinner having olefinically unsaturated groups and having a calculated molar mass of less than 500;

wherein 75 to 100 wt.% of component I is an aliphatic urethane (meth)acrylate having an average (meth)acryloyl functionality of 3 to 4.5 and a calculated molecular mass of at least 826;

wherein said aliphatic urethane (meth)acrylate is formed by reacting an acyclic aliphatic diisocyanate having 8 C atoms with at least one low-

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molecular aliphatic compound, wherein said low-molecular aliphatic compound has at least one hydroxy group and at least one (meth)acryloyl group, and optionally with at least one low-molecular aliphatic hydroxy reactant selected from the group consisting of diols and polyols; and

wherein 0 to 25 wt.% of component I is a radically polymerizable member selected from the group consisting of polymers and oligomers, wherein said radically polymerizable member contains radically polymerizable double bonds, said radically polymerizable member being different from the aliphatic urethane (meth)acrylate of component I.

Claim 11. (previously presented) The process according to claim 10 wherein the aliphatic urethane (meth)acrylate is formed by reacting polyisocyanates based on acyclic aliphatic diisocyanates having 8 C atoms, wherein the polyisocyanates contain heteroatom groups linking isocyanate groups together in said polyisocyanates, with at least one low-molecular aliphatic compound, wherein said low-molecular aliphatic compound has at least one hydroxy group and at least one (meth)acryloyl group, and optionally with at least one low-molecular aliphatic hydroxy reactant selected from the group consisting of diols and polyols.

Claim 12. (previously presented) The process according to claim 10 wherein the clear lacquer coating comprises a resin solid consisting of:

- I. 90 to 100 wt.% of at least one radically polymerizable polymer selected from the group consisting of oligomers and prepolymers, wherein said polymers have at least one olefinically unsaturated group; and
- II. 0 to 10 wt.% of at least one radically polymerizable reactive thinner having olefinically unsaturated groups and having a calculated molar mass of less than 500.

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- Claim 13. (previously presented) A process for coating a transparent sealing coat onto a multi-coat lacquer, comprising the steps of:
- (a) applying the transparent sealing coat to an outer lacquer coating of a substrate; and
 - (b) curing the transparent sealing coat with high-energy radiation;

wherein the transparent sealing coat comprises a resin solid consisting of:

- I. 70 to 100 wt.% of at least one radically polymerizable polymer selected from the group consisting of oligomers and prepolymers, wherein said polymers have at least one olefinically unsaturated group; and
- II. 0 to 30 wt.% of at least one radically polymerizable reactive thinner having olefinically unsaturated groups and having a calculated molar mass of less than 500;

wherein 75 to 100 wt% of component I is an aliphatic urethane (meth)acrylate having an average (meth)acryloyl functionality of 3 to 4.5 and a calculated molecular mass of at least 826;

wherein said aliphatic urethane (meth)acrylate is formed by reacting an acyclic aliphatic diisocyanate having 8 C atoms with at least one low-molecular aliphatic compound, wherein said low-molecular aliphatic compound has at least one hydroxy group and at least one (meth)acryloyl group, and optionally with at least one low-molecular aliphatic hydroxyl reactant selected from the group consisting of diols and polyols and

wherein 0 to 25 wt.% of component I is a radically polymerizable member selected from the group consisting of polymers and oligomers, wherein said radically polymerizable member contains radically polymerizable double bonds, said radically polymerisable member being different from the aliphatic urethane (meth)acrylate of component I.

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Claim 14. (previously presented) The process according to claim 13 wherein the aliphatic urethane (meth)acrylate is formed by reacting polyisocyanates based on acyclic aliphatic diisocyanates having 8 C atoms, wherein the polyisocyanates contain heteroatom groups linking isocyanate groups together in said polyisocyanates, with at least one low-molecular aliphatic compound, wherein said low-molecular aliphatic compound has at least one hydroxy group and at least one (meth)acryloyl group, and optionally with at least one low-molecular aliphatic hydroxyl reactant selected from the group consisting of diols and polyols.

Claim 15. (previously presented) The process according to claim 13 wherein the transparent sealing coat comprises a resin solid consisting of:

- I. 90 to 100 wt.% of at least one radically polymerizable polymer selected from the group consisting of oligomers and prepolymers, wherein said polymers have at least one olefinically unsaturated group; and
- II. 0 to 10 wt.% of at least one radically polymerizable reactive thinner having olefinically unsaturated groups and having a calculated molar mass of less than 500.

Claim 16. (previously presented) The process according to claim 10 or 13, wherein the acyclic aliphatic diisocyanate having 8 C atoms is selected from the group consisting of methyl pentane diisocyanate and hexane diisocyanate.

Claim 17. (previously presented) The process according to claim 11 or 14, wherein the polyisocyanates are selected from the group consisting of polyisocyanates with carbodiimide groups, polyisocyanates with allophanate groups, polyisocyanates with isocyanurate groups, polyisocyanates with uretdione groups, and polyisocyanates with biuret groups.

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- Claim 18. (previously presented) The process according to claim 11 or 14, wherein the polyisocyanates are selected from the groups consisting of tris-(6-isocyanatohexyl)-biuret and isocyanurate derived from hexane diisocyanate.
- Claim 19. (previously presented) The process according to claim 13 wherein the transparent sealing coat is applied in step (a) to an outer lacquer coating selected from the group consisting of a single-coat finishing lacquer coat, an outer finishing lacquer coat, and an outer clear lacquer coat.
- Claim 20. (previously presented) A substrate coated according to the process of claim 10.
- Claim 21. (previously presented) A substrate coated according to the process of claim 13.
- Claim 22. (previously presented) The substrate according to claim 20 or 21 wherein said substrate is a motor vehicle or part thereof.
- Claim 23. (previously presented) The process according to claim 13 wherein said transparent sealing coat is applied in step (a) to areas of the outer lacquer coating particularly susceptible to scratching.
- Claim 24. (previously presented) The process according to claim 23 wherein said transparent sealing coat is applied to areas of a motor vehicle selected from the group consisting of areas near locks, areas near door handles, areas near door entries, loading edges, roof, and rear end of said motor vehicle.